NEPA counties exemplify many of the benefits and costs of shale development

Benefits
- Lease and royalty payments
- Employment
- Ancillary development (hotels, restaurants)
- Natural gas for manufacturing/transportation
- Lower consumer gas prices

Costs
- Spills, methane migration, leaking pits
- Housing shortages, strain on social services
- Industrialization of rural landscape
- Community divisions
- Local air quality impacts
They illustrate many of the “big picture” questions

- Who has the right to regulate the development?
- What are the economic implications?
- Is drilling/fracking damaging water supplies?
- Can the global climate benefits of gas be realized without affecting local air quality?
But not all of them

- How much, if any, shale gas should be exported?
- Is natural gas a bridge to renewable energy or is it postponing a transition away from fossil fuels?
- What are the cumulative health, environmental and economic impacts of full development?
Began covering the Marcellus Shale in 2008

- First series: May 4, 2008

Topics included the size of the resource, lease offers and deals, potential environmental and safety risks, comparisons to other gas boom regions, what to do with the wastewater
Who has the right to regulate oil and gas development?
“The federal government will begin testing water supplies for 61 homes in Dimock Twp. as soon as today in a dramatic expansion of the Environmental Protection Agency’s current investigation into potential contamination by natural gas drilling and hydraulic fracturing in the Susquehanna County township. Citing its authority under the Superfund law, the EPA will also begin providing replacement drinking water supplies to four township homes where water tests taken by outside firms raised health concerns — some of them rising to the level of an “imminent and substantial threat” in houses where small children live, the agency said.

The EPA reached out to both the state Department of Environmental Protection and Cabot Oil & Gas Corp., the Marcellus Shale driller active in the area, to ask if they would be interested in working with the agency as it collects data. Both agreed to cooperate Thursday, but indicated they were not convinced that the EPA’s actions are necessary.

... Federal environmental regulators reopened their investigation of Dimock water wells in late December after declaring on Dec. 2 that the water posed no “immediate health threat.” The agency reversed course after reviewing water test results released only after the agency’s announcement. The agency has been criticized by the state for having only a “rudimentary” understanding of the situation in Dimock and by the industry for overstepping its regulatory authority.”
State, feds divided on DRBC’s gas-drilling plan
LAURA LEGERE
July 13, 2011
Written comments posted online by the Delaware River Basin Commission show federal and state officials sharply divided over the interstate agency’s proposal to regulate gas drilling in the 13,000-square-mile watershed. The comments from government agencies range from a push for far more oversight by the New York state attorney general’s office to a recommendation by the Pennsylvania Department of Environmental Protection that the DRBC dramatically curtail its proposed rules.

The draft regulations, released in December, address where drillers get the water necessary for natural gas development, where well pads can be built in the watershed and how companies must dispose of wastewater.
Act 13 zoning restrictions

Benton touting gas well monitor
LAURA LEGERE
January 2, 2012

As the state General Assembly considers legislation to curb local control of natural gas drilling, an experiment in local oversight of an exploratory Marcellus Shale well in Benton Twp. has been an “unequivocal” success, a supervisor said. An independent engineer hired by Benton is monitoring the drilling and construction of a well by Southwestern Energy Production Co. that will evaluate the gas-bearing potential of the shale more than a mile below a field off Route 407.

The idea, Supervisor Larry Seymour said, is “monitoring as opposed to controlling” the operation. “The issue really is getting the desired outcomes and avoiding unanticipated negative consequences.”

July 28, 2012

Act 13, which was adopted in February, made gas drilling a permitted use in all zoning districts, including residential. That uprooted a central aspect of Benton Twp.’s ordinance, which requires a gas operator to get conditional use approval before drilling a well.

The township attached several conditions to the one exploratory Marcellus Shale well drilled so far in Benton, including allowing an independent engineer on site to witness the process.

“A conditional use permit really isn’t much more than a conversation between the applicant and the community,” Supervisor Larry Seymour said. “As far as I’m concerned, when there’s an activity as dramatic as oil and gas development that is going to have community-wide ramifications, it calls for a conversation.”
What are the economic implications?
Susquehanna County: Economics

The county has produced $1.2 billion worth of gas from 330 wells through June 2012
- $150 million in royalties to lease holders

State sales tax collections in the county increased 10 percent between 2007-10, compared to a statewide county level decrease of 3.8 percent

Susquehanna County current unemployment rate: 7.8%

2008-10: the county’s average income decreased, its unemployment rose by 3.2 percentage points
Wyoming County: Economics

- Wyoming County current unemployment rate: 9.3%
- 2008-10: Per-capita income increased 4.3 percent, due to a $212 million natural gas lease deal in 2009 on about 37,000 acres of property
P&G taps Marcellus for power

ROBERT L. BAKER
October 11, 2012

WASHINGTON TWP. — The Procter & Gamble plant in Wyoming County will be 100 percent energy self-sufficient by February by tapping into Marcellus Shale gas that lays beneath its property. The plant, which produces Pampers and Luvs diapers and Charmin toilet paper, now consumes 800 billion kilowatt hours, or enough energy to run 40,000 homes. It currently produces 50 percent of its electrical needs. Otherwise, for the last 45 years, it easily has been the largest electricity and natural gas customer for local utilities.

“But not after next February,” P&G spokesman Alex Fried said Wednesday afternoon. “This will be a first for any of Procter & Gamble’s 150 plants worldwide, and we’re pretty pleased it’s happening here in Wyoming County.”

The transformation did not happen overnight and it was not without its fits and starts.

About eight years ago, Procter & Gamble was looking at being the lead customer in an 88-windmill farm that would use the Mehoopany plant’s power grid to send out half the generation it did not harness inside the plant.

But BP Wind Energy ran into some cash-flow issues during the recession and at the same time, Citrus Energy was exploring for gas on P&G’s property. It discovered wells on P&G and surrounding properties were among the most prolific in the Marcellus Shale.

Among its efforts toward self-sufficiency, on Wednesday, P&G showed off the only fast-fill CNG station in the region, which replaces more than 400,000 gallons of diesel.

The station is located at the Exel-operated P&G warehouse in Washington and Meshoppen townships, and presently serves as the energy source for 22 trucks that move product from the P&G plant to the warehouse 5 miles away.

The trucks will be filled two to three times during a 12-hour shift, P&G project manager Cale Newswanger said.

Mr. Newswanger said Exel has changed 52 of its forklifts from electric to CNG for better productivity.

Exel General Manager Ryan Calvert said the plant was the first of Exel’s more than 400 warehouses in the Americas to be sustained by energy harnessed locally.

The Dallas resident said, “It gives us a tremendous sense of pride to be on the cutting edge of the industry in an environment of sustainability.”

Mr. Fried noted that P&G had in the works to create another CNG station adjacent to its manufacturing plant, but had no interest in getting in the fueling business.

“That’s for someone else to tackle.” he said.
UGI expects a rate cut
DAVID FALCHEK
May 18, 2012
Natural gas rates will remain the same for customers of UGI Penn Natural Gas for most of 2012 but are expected to fall just before the heating season. UGI said it anticipated keeping natural gas rates unchanged for much of the year, but would reduce rates Dec. 1, sending the average gas bill down about 4.5 percent. For a household using about 8.9 thousand cubic feet, or Mcf, of natural gas per month, the bill will drop from $94.50 to $90.25 per month.

The component of the bill falling, the purchased gas cost rate, currently at $5.22 per Mcf, is expected to fall 8.9 percent to $4.75, the lowest in at least a decade. The expected rate is an estimate and may change.

Vicki O. Ebner, senior vice president of customer and government relations, credited the nation’s shale gas reserves for the low wholesale price of the natural gas.

“An abundant supply of natural gas is allowing us to continue to pass these savings onto our customers,” she said.

This is the latest rate drop for UGI, which is passing on much of the lower price of natural gas, driven down by a warm winter and abundant supplies. The typical UGI customer’s bill is 40 percent lower than four years ago. While the rate declines for UGI customers have been welcome, UGI’s rates remain among the highest in the state.
Is drilling/fracking damaging water supplies?
Plagued by methane

Faulty drilling practices linked to stray gas

LAURA LEGERE

Methane that caused a blast in a Dimock water well, forced a family to evacuate a Terry Twp. home and bubbled up in the Susquehanna River was unsettled from porous rock between the surface and the Marcellus Shale as drillers searched for deep gas.

In high-profile cases affecting 35 drinking-water wells in Bradford and Susquehanna counties, state investigators have linked the stray methane to faulty drilling practices that did not account for the gas-rich and highly fractured shallow geology in Northeast Pennsylvania — a hazard that has made the region one of the most difficult places in the state to drill safely into the Marcellus Shale.

As shale gas drilling has increased in Pennsylvania, so has the prevalence of methane migrating into water supplies as a result of the exploration.

The number of new Marcellus wells nearly doubled between 2009 and 2010, but the rate of methane migration more than quintupled: In 2009, there were 1.26 cases of gas migrating into groundwater for every 1,000 new Marcellus wells drilled, according to the Department of Environmental Protection. Last year, there were more than seven cases for every 1,000 new wells.

Of the 10 confirmed Marcellus Shale stray gas cases since the start of 2008 — each of which may include more than one affected water well or flawed gas well — all of them have been recorded in this corner of the state. Seven of the cases were in Bradford County and one each was in Wyoming, Susquehanna and Lycoming counties.
Dimock 2011
Study: Drilling could hurt streams
LAURA LEGERE
October 13, 2010
A preliminary study of Susquehanna County watersheds has found that high-density Marcellus Shale gas drilling might degrade streams regardless of how carefully that drilling is done.
The tentative findings were released by researchers with the Academy of Natural Sciences in Philadelphia on Tuesday to demonstrate the need for studies of the long-term and cumulative impacts of deep-gas drilling on watersheds — an area largely devoid of research despite the rapid expansion of Marcellus Shale gas extraction in the state.
The preliminary study conducted this summer by academy researchers and a graduate student at the University of Pennsylvania looked at small watersheds in and around Dimock Twp., an epicenter of shale drilling in the region.
Scientists compared water quality and the presence of environmentally sensitive insects and salamanders in nine similar watersheds, three of which had no drilling, three some drilling and three a high density of drilling.
The watersheds with high-density drilling — defined as four to eight wells per square kilometer — had significant impacts on all measures compared to those with little or no drilling, the researchers found.
Water conductivity — a measure of the dissolved salts and metals in the stream and a potential indicator of the presence of gas drilling wastewater — was almost twice as high in the streams in high-density areas than those in areas with little or no drilling.
In the high-density sites, the number of both sensitive insects and salamanders were reduced by 25 percent.
The findings were first reported Tuesday by The Philadelphia Inquirer.
“The data suggest, on one hand, that you could have a certain level of drilling and be OK,” said Dr. David Velinsky, vice president of the Academy’s Patrick Center for Environmental Research. “But if you get to a watershed where you have tons of these well pads and the associated infrastructure, you’ll see some change in the ecosystem health.”
Can the global climate benefits of gas be realized without affecting local air quality?
State to monitor air quality in 2 counties

LAURA LEGERE

July 25, 2012

State environmental regulators plan to install a long-term air-monitoring device in Susquehanna and Wyoming counties to screen for impacts from natural gas operations in the region. The monitoring plan, which is still in its early stages, was inspired by public concerns raised at recent hearings for proposed natural gas compressor stations that move gas from the Marcellus Shale in the two counties, regional Department of Environmental Protection spokeswoman Colleen Connolly said. “We felt, given the number of compressor stations being put up in Susquehanna and Wyoming counties, they would be ideal locations,” she said.

DEP will use a canister device to monitor primarily for volatile organic compounds beginning at the start of 2013, she said. The device will likely operate for a year in one county and then be moved to the second county for a year.

Regulators will be able to remove the device from a mount high in the air to collect results every two or three weeks, she said. The department has yet to secure locations and leases for the monitoring sites.

Residents and environmental groups have criticized the department for not quickly or adequately expanding the state’s existing air quality monitoring network to capture changes related to increased natural gas development, especially in rural areas with little if any established air monitoring.

Three short-term studies the state performed near shale gas infrastructure in 2010 did not find any pollutants at concentrations likely to cause health impacts, but DEP could not tell from the short studies if the cumulative air emissions from all gas activities in an area would violate federal health standards.

A new yearlong study, announced Monday, will test the air near large-scale gas compressor and processing stations in southwestern Pennsylvania to determine if there are any chronic or long-term risks to the public.

The department also plans to install a new monitoring site for ozone and nitrogen oxides downwind of Marcellus Shale drilling and gas processing in Bradford County this year.
EIA, Aug. 2012:
“U.S. carbon dioxide (CO₂) emissions resulting from energy use during the first quarter of 2012 were the lowest in two decades for any January-March period. Normally, CO₂ emissions during the year are highest in the first quarter because of strong demand for heat produced by fossil fuels. However, CO₂ emissions during January-March 2012 were low due to a combination of three factors:
• A mild winter that reduced household heating demand and therefore energy use
• A decline in coal-fired electricity generation, due largely to historically low natural gas prices
• Reduced gasoline demand”